

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF CLAIMS:

Claims 1-14 : (Canceled)

Claim 15 : (New) An optical cross-connect (OXC) for use in a wavelength division multiplex (WDM) network, comprising:

a) a plurality of optical inputs for receiving respective WDM communication bearing radiation having channels;

b) a plurality of optical outputs for outputting the respective WDM radiation switched by the OXC;

c) a single stage optical switching matrix for switching the WDM radiation between the optical inputs and outputs, the optical switching matrix comprising a respective switching matrix for each wavelength channel of the WDM radiation;

d) a further plurality of optical inputs and outputs for respectively adding and dropping selected wavelength channels; and

e) a respective multistage optical switching matrix for selectively connecting the further plurality of optical inputs and outputs to inputs and outputs of the single stage switching matrix.

Claim 16 : (New) The OXC according to claim 15, in which the multistage switching matrix comprises a multistage Clos network in which the single stage switching matrix comprises one stage of the Clos network.

Claim 17 : (New) An optical cross-connect (OXC), comprising:

a) a plurality of input channels for through traffic;

b) a plurality of output channels for the through traffic;

c) a first group of optical switching matrices for connecting each through traffic input channel to any of the through traffic output channels, each through traffic input channel being connected to an input of a switching matrix of the first group, and each through traffic output channel being connected to an output of the switching matrix of the first group; and

d) a third plurality of input channels for adding traffic, each add traffic input channel being connected to an input of a second group of switching matrices, wherein outputs of the second group of switching matrices are connected to inputs of a third group of switching matrices, and outputs of the third group of switching matrices are connected to inputs of the first group of switching matrices such that the switching matrices of the second, third and first groups form a Clos network.

Claim 18 : (New) The OXC according to claim 17, and further comprising a plurality of demultiplexers, each having an input for connection to an optical input which carries WDM radiation comprising a plurality of wavelength channels, and a plurality of outputs for outputting one of these wavelength channels to one of the through traffic input channels.

Claim 19 : (New) The OXC according to claim 18, in which each demultiplexer is connected to each switching matrix of the first group by one input channel.

Claim 20 : (New) The OXC according to claim 18, in which the demultiplexers are wavelength demultiplexers outputting a respective wavelength channel to an output defined according to a carrier wavelength of the wavelength channel, and the outputs of various demultiplexers for outputting the wavelength channels of a same carrier wavelength are connected to a same switching matrix of the first group.

Claim 21 : (New) The OXC according to claim 17, wherein each switching matrix of the second group has a number M of inputs for adding traffic, and a number of at least $2M-1$ outputs connected to inputs of switching matrices of the third group.

Claim 22 : (New) The OXC according to claim 17, wherein each optical switching matrix of the first group has a number M of outputs for through traffic, and a number of at least $2M-1$ inputs connected to outputs of switching matrices of the third group.

Claim 23 : (New) An optical cross-connect (OXC), comprising:

- a) a plurality of input channels for through traffic;
- b) a plurality of output channels for the through traffic;
- c) a first group of optical switching matrices for connecting each through traffic input channel with any of the through traffic output channels, each through traffic input channel being connected to an input of a switching matrix of the first group, and each through traffic output channel being connected to an output of a switching matrix of the first group;
- d) a plurality of output channels for dropping traffic, each drop traffic output channel being connected to an output of a fifth group of switching matrices, wherein inputs of the fifth group of switching matrices are connected to outputs of a fourth group of switching matrices, and inputs of the fourth group of switching matrices are connected to outputs of the first group of switching matrices such that the switching matrices of the first, fourth and fifth groups form a Clos network.

Claim 24 : (New) The OXC according to claim 23, and further comprising a plurality of multiplexers, each having an output for connecting to an optical output which carries WDM radiation comprising a plurality of wavelength channels, and a plurality of inputs for inputting one of these wavelength channels from one of the through traffic output channels.

Claim 25 : (New) The OXC according to claim 24, in which each multiplexer is connected to each switching matrix of the first group by one output channel.

Claim 26 : (New) The OXC according to claim 23, in which each optical switching matrix of the fifth group has a number M of outputs for dropping traffic, and a number of at least $2M-1$ inputs connected to outputs of switching matrices of the fourth group.

Claim 27 : (New) The OXC according to claim 23, in which each optical switching matrix of the first group has a number M of inputs for through traffic, and a number of at least $2M-1$ outputs connected to inputs of switching matrices of the fourth group.

Claim 28 : (New) The OXC according to claim 17, in which the second group of optical switching matrices are identical.

Claim 29 : (New) The OXC according to claim 23, in which the fifth group of optical switching matrices are identical.